

Boone County 1st Grade Science Curriculum Map

Unit 1, Engineering Design	Duration:
<i>Key Essential Questions:</i>	
<ul style="list-style-type: none"> • What kinds of problems can people solve with better tools? • Why does the shape of an object contribute to its function? • How do we compare different solutions to the same problem? 	
<i>Transfer Goals:</i>	
<i>Students will be able to use their learning to</i>	
<ul style="list-style-type: none"> • Research situations in order to solve a simple problem [by developing a tool or object.] • Design a simple sketch, drawing, or model [to illustrate that an object’s shape functions to solve a problem.] • Design, test, collect data to analyze [the performance of two objects, comparing their ability to solve a problem.] 	
Performance Expectation	
K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	
K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.	
K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	
Notes: The engineering design process is introduced/reinforced through guided student choice in an introductory unit, as well as being imbedded in specific units throughout the year.	

Unit 2, Patterns of Change in the Sky	Duration:
<i>Key Essential Questions:</i>	
<ul style="list-style-type: none"> • What objects are in the sky and how do they seem to move? 	
<i>Transfer Goals:</i>	
<i>Students will be able to use their learning to</i>	
<ul style="list-style-type: none"> • Make observations and collect data to describe predictable patterns [of movement of the sun, moon, and stars]. • Make observations and collect data to make comparisons [of amount of daylight at different times of year]. • Research a simple problem and design an object or tool to solve the problem [of observing objects in the sky] 	
Performance Expectation	

1-ESS1-1. Use observations of the sun, moon, and stars to describe patterns that can be predicted.
1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year
Notes: ESS1-2 is introduced at the beginning of the school year but observations to support this standard are continued throughout the full year in order to observe the change.

Unit 3, Light and Sound Waves	Duration:
<i>Key Essential Questions:</i>	
<ul style="list-style-type: none"> • What happens when there is no light? • How do different materials interact with light and sound? 	
<i>Transfer Goals:</i>	
<i>Students will be able to use their learning to</i>	
<ul style="list-style-type: none"> • Design a simple test in order to make observations and gather evidence about a natural phenomena [that objects can be seen only when illuminated]. • Plan and conduct investigations with peers to gather evidence [of the effect of placing objects made with different materials in the path of a beam]. • Plan and conduct investigations with peers to gather evidence [that vibrating materials can make sound and that sound can make materials move]. • Design a simple sketch, drawing, or model to illustrate that an object’s shape functions to solve a problem. 	
Performance Expectation	
1-PS4-1 Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.	
1-PS4-2. Make observations to construct an evidence-based account that objects can be seen only when illuminated.	
1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.	
K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.	
Notes: ETS1-2 occurs throughout the year but is emphasized in this unit and unit six (mimicking organisms).	

Unit 4, Light and Sound in Communication	Duration:
<i>Key Essential Questions:</i>	
<ul style="list-style-type: none"> ● How can light and sound be used to communicate? 	
<i>Transfer Goals:</i>	
<i>Students will be able to use their learning to</i>	
<ul style="list-style-type: none"> ● Use tools and materials to design and build a device (that uses light or sound) to solve a problem (of communicating over a distance). ● Research situations in order to solve a simple problem by developing a tool or object [using light or sound to communicate] ● Design, test, collect data, and analyze the performance of two objects [using light or sound to communicate], comparing their ability to solve a problem. 	
Performance Expectation	
1-PS4-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.*	
K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	
K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	
Notes:	

Unit 5, Characteristics of Living Things	Duration:
<i>Key Essential Questions:</i>	
<ul style="list-style-type: none"> ● What are some ways plants and animals meet their needs so they can grow and survive? ● How does the behavior of the parent help the offspring survive? ● How are parents and offspring similar and different? 	
<i>Transfer Goals:</i>	
<i>Students will be able to use their learning to</i>	
<ul style="list-style-type: none"> ● Read text and use media to identify patterns [in survival behaviors that aid parent and offspring.] ● Use observations to make an evidence-based account comparing patterns [(that offspring are similar but different from their parents.)] 	
Performance Expectation	
1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.	

1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
Notes:

Unit 6, Mimicking Organisms to Solve Problems	Duration:
<i>Key Essential Questions:</i>	
<ul style="list-style-type: none"> • What can we learn from how plants and animals meet their needs, survive, and grow? 	
<i>Transfer Goals:</i>	
<i>Students will be able to use their learning to</i>	
<ul style="list-style-type: none"> • Construct explanations and design solutions to a human problem (mimicking how plants and animals use their parts to survive). • Research situations in order to solve a simple problem by developing a tool or object. • Design a simple sketch, drawing, or model to illustrate that an object's shape functions to solve a problem. 	
Performance Expectation	
1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.*	
K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	
K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.	
Notes: Notes: ETS1-2 occurs throughout the year but is emphasized in this unit and unit three (light, waves and illumination).	